polyoxyethylene-polyoxypropylene block coplymer (e.g., PLURONIC polyols)

A clean page 11 showing this change is also attached.

In The Claims

Please substitute the following claims:

Claim 1 (amended)

1. An immunogenically active component useful for preventing or ameliorating equine protozoal myeloencephalitis infection or disease which comprises a member selected from the group consisting of merozoite antibody inducing, inactivated *Sarcocystis neurona* cells; tachyzoite antibody inducing, inactivated *Neospora hughesi* cells; a merozoite or tachyzoite antibody inducing antigen derived from said cells; DNA derived from said cells capable of inducing a merozoite or tachyzoite antibody immune response; and a mixture thereof.

Cancel claims 23-25, without prejudice to their presentation anew in a continuation application.

REMARKS

Reconsideration of this application and claims 1-25 is respectfully requested.

The Abstract was objected to for being in a 2 paragraph format. This has now been traversed by the amendments hereinabove.

The specification was objected to for not always indicating the trade mark sign or alternatively for failing to use accompanying generic terminology. This objection has also been traversed by the amendments hereinabove made so that the trade mark signs are now indicated where noted by the Examiner, and by insuring that generic terminology accompanies at least one instance where the particular trade mark sign is noted.

Reconsideration of the objections is accordingly respectfully solicited.

35 USC 112

The rejection to claim 23 has been traversed by the cancellation of this claim without prejudice.

35 USC 102(b) - Claims 1, 3-11 i/v/o Marsh US ('737) and WO ("927)

Marsh has been cited under 35 USC 102(b) as anticipating the invention defined in claims 1 and 3-11, the rejection positing that Marsh '737 discloses tachyzoites of Neospora equi isolates were removed from an adult horse with EPM, the isolates were cultured on vero cells and the protein and nucleic acid were isolated (cols. 7-8); that immunogenic active components were prepared (col. 10); that Marsh further discloses vaccine compositions, a variety of carriers and adjuvants (col. 14); and that adjusting the unit dosages, volumes, and percentages are well known in the

art of immunology and pharmaceuticals.

The rejection further argues that Marsh in '927 discloses the same invention as claimed, specifically referring to '927 claims 4, 5, 8, 15, 21, 25.

Applicants respectfully traverse this rejection.

The invention defined in claim 1, as amended, relates to an immunologically active component useful for preventing or ameliorating equine protozoal myeloencephalitis infection or disease comprising, inter alia, ... tachyzoite antibody inducing, inactivated Neospora Hughesi cells, ... a tachyzoite antibody inducing antigen derived from said cells, DNA derived from said cells capable of inducing a ... tachyzoite antibody immune response, and ...

The cited Marsh reference neither discloses nor enables an immunologically active component useful for preventing or ameliorating equine protozoal myeloencephalitis infection or disease. Marsh's focus is directed to isolated equine Neospora cultures., which are used to develop diagnostic assays for the detection of Neospora infections in horses and other animals. Marsh also discloses that animals (mice and/or rabbits, see Ex. 2, col.19, "Antibody Production") were used to obtain to obtain polyclonal and monoclonal antibodies to the NE 1 isolate. It is these antibodies, referred to in column 10, lines 58-67, that are prepared in response to an immunogen, which are said to be reactive to Neospora proteins - the latter apparently being the "immunogenic reactive components" cited in the rejection. Such a disclosure, however, is not synonymous with a teaching of a useful vaccine. Alternatively, there is a reference in column 10, lines 35-45, which discloses that purified proteins may then be used in the diagnostic assays and to produce pharmaceutical compositions, including preparing recombinant polypeptides useful as vaccines involving the use of recombinant viruses. The specification at that point again does not identify the nature of such purified proteins or recombinant polypeptides which are the immunologically active components useful for preventing or ameliorating equine protozoal myeloencephalitis infection or disease.

In column 14, beginning at line 29, Marsh also merely speculates that a pharmaceutical composition for treatment or prevention of Neospora infections "is prepared using anti-Neospora monoclonal antibodies or fragments thereof as well as Neospora or their immunologic equivalents." Respectfully this is also not a teaching which discloses or enables one skilled in the art to make a vaccine since it does not inform that skilled man what is the identity of the immunogen or the immunogenic response required which would actually be useful for preventing or ameliorating equine protozoal myeloencephalitis infection or disease.

In columns 16 and 17 of Marsh '737, there is further speculation that a vaccine may be made of Neospora tachyzoites, bradyzoites, or other stages of the protozoan's life cycle. This is merely an invitation to experiment among the different life stages of the protozoan to find a component that may be effective. Thus, neither this disclosure nor any of the others cited Marsh disclosures teach an immunologically active component useful for preventing or ameliorating equine protozoal myeloencephalitis infection or disease which comprises a member that specifically induces a tachyzoite antibody immune response. The "claims" of the Marsh PCT application cited in the rejection, actually make it abundantly clear that Marsh did not possess or teach the

invention herein claimed to one skilled in the art.

Reconsideration of the rejection of claims 1 and 3-11 as anticipated by Marsh '737 and '927 is accordingly respectfully requested.

35 USC 102(b) - claim 2 over Granastrom *et al*

Granastrom was cited by the rejection as teaching antigens of cultured Sarcocystis neurona merozoites, more specifically referring to the abstract, that 8 different immunologically active components are disclosed. Applicants respectfully traverse this rejection. The abstract discloses that 8 proteins of cultured Sarcocystis neurona merozoites, examined using immunoblot analysis, were detected only by S. neurona antiserum. Granastrom, of course, is only concerned with an "antigen" analysis in order to be able to distinguish among Sarcocystis species. Granastrom, however, does not teach or disclose an immunologically active component useful for preventing or ameliorating equine protozoal myeloencephalitis infection or disease. Granastrom, therefore, cannot anticipate the invention defined by claim 2.

35 USC 102(b) - Claims 12-22 over Marsh (WO 99/47927) and Azumendi

The rejection describes claims 12-22 as being drawn to vaccine compositions and methods of prevention of EPM in equines by administering immunologically active components and vaccine compositions which comprise inactivated equine neospora and Sarcocystis neurona cells.

To this characterization, the rejection cites Azumendi as disclosing a vaccine and vaccination method against infections produced by S. neurona, and Marsh as disclosing immunological compositions and methods of their use for treatment and prevention of equine Neospora infections.

Applicants respectfully traverse this rejection.

Azumendi does not disclose Sarcocystis neurona. rather azumendi relates to Sarcocystis protozoa. The vaccine described by Azumendi is comprised of lyophilized inactivated bradozooids of Sarcocystis protozoa, which are prepared via inoculating Sarcocystis protozoa into a living animal, extracting the bradozooids of the protozoa from the animal, inactivating the bradozooids, and incorporating the same into a carrier for administration as a vaccine. The immunological reaction to the inactivated bradozooids on their own can be rather poor, according Azumendi on page 4 beginning at line 16; and, therefore it is preferred that sarcocystine toxin is added.

It is evident that Azumendi does not relate to EPM and does not teach or enable a vaccine (claims 12-14) which comprises an immunologically active component useful for preventing or ameliorating equine protozoal myeloencephalitis infection or disease comprising, inter alia, merozoite inducing, inactivated Sarcocystis neurona cells, or a vaccine composition (claims 15-22) for the prevention or amelioration of EPM disease in equines comprising two components - one component consisting of, inter alia, merozoite inducing, inactivated Sarcocystis neurona cells, and a second component consisting of, inter alia, tachyzoite inducing, inactivated Neospora hughesi cells.

Marsh '927 has already been discussed above in connection with claims 1 and 3-11, and for the reasons there noted Marsh does not teach or enable a vaccine (claims 12-14) which comprises an immunologically active component useful for preventing or ameliorating equine protozoal myeloencephalitis infection or disease comprising, inter alia, merozoite inducing, inactivated Sarcocystis neurona cells. Moreover, Marsh cannot possibly anticipate a vaccine composition (claims 15-22) for the prevention or amelioration of EPM disease in equines comprising two components -one component consisting of, inter alia, merozoite inducing, inactivated Sarcocystis neurona cells, and a second component consisting of, inter alia, tachyzoite inducing, inactivated Neospora hughesi cells.

Reconsideration and withdrawal of the rejection of claims 12-22, in view of these remarks, is accordingly solicited.

35 USC 102(b) - claims 23-25, Marsh, J. Parisitology, 1998, or Mansfield,USP 6,153,394

The rejection to claims 23-25 has been traversed by their cancellation without prejudice

In view of the remarks and amendments hereinabove made it is respectfully submitted that this application and claims 1-23, as amended, are free of objections, and free of anticipation under 35 USC 102(b). reconsideration and an early allowance is therefor earnestly solicited.

Respectfully submitted,

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Marked-Up Version of Claims

1. An immunogenically active component useful for preventing or ameliorating equine protozoal myoencephalitis infection or disease which comprises a member selected from the group consisting of merozoite antibody inducing, inactivated *Sarcocystis neurona* cells; tachyzoite antibody inducing, inactivated *Neospora hughesi* cells; a merozoite or tachyzoite antibody inducing antigen derived from said cells; DNA derived from said cells capable of inducing a merozoite or tachyzoite antibody immune response; and a mixture thereof.